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Licensee:	Southern Nuclear Operating Company, Inc. (SNC)
Facility:	E. I. Hatch, Units 1 & 2
Location:	P. O. Box 439 Baxley, Georgia 31513
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Enclosure 2

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EXECUTIVE SUMMARY

E. I. Hatch, Units 1 and 2
NRC Inspection Report 50-321/97-05, 50-366/97-05

This integrated inspection included aspects of licensee operations, engineering, maintenance, and plant support. The report covers a 6-week period of resident inspection; in addition, it includes the results of announced inspections by a regional reactor inspector and a radiation protection/chemistry specialist.

Operations

- Plant procedures provided adequate instructions and Unit 2 operators took prompt and correct actions in response to a feedwater control circuit swap from three element control to single element control. Engineering actions to troubleshoot the problem were appropriate (Section O1.2).

- The inspectors concluded that the failure to include Unit 1 plant service water strainer differential pressure instruments and their associated setpoints in the instrument index was an oversight. Equipment alignment, component operability, material conditions, and housekeeping observed during an Engineered Safety Feature walkdown, were acceptable. Housekeeping for the diesel generator rooms was excellent (Section O2.1).

- An example of a violation for failure to follow procedure was identified for a clearance writer and two reviewers. The clearance writer and reviewers failed to identify that the established clearance boundaries affected other Emergency Core Cooling and support systems (Section O4.1).

- The audit of Operations performance during the Unit 2 startup was conducted by trained and qualified personnel. Procedure requirements and audit techniques were clearly identified in the audit checklist (Section O7.1).

- Site management maintained good control of overtime. Technical Specification and procedural requirements were met (Section O8.1).

Maintenance

- Routine maintenance activities observed were generally completed in a thorough and professional manner. Appropriated engineering and supervisory oversight was provided (Section M1.1).

- Equipment failures examined were generally appropriately addressed. One item relating to the installation of an incorrect type of connector on wide range monitor D11K621A was identified (Section M1.2).

- The licensee had made little progress in correcting the material condition deficiencies identified during the Maintenance Implementation Inspection of October 1996. As noted in October, the discrepant material condition items were indicative of a lack of attention to detail on the part of Operations and Engineering personnel who make frequent tours to the areas (Section M2.1).

- For the surveillances observed, all data met the required acceptance criteria and the equipment performed satisfactorily. The surveillance tests were conducted in accordance with procedures and with appropriate oversight from supervisors and system engineers. All involved personnel were knowledgeable of the test and system performance requirements. Overall performance was generally professional and competent (Section M3.1).

- An example of a violation was identified for a failure to follow procedure associated with sampling of fire-rated assemblies and penetration devices. Additional weaknesses were identified for the lack of clarity of some surveillance procedural requirements and administrative aspects of the fire protection program (Section M3.2).

- A review of a licensee Safety Audit and Engineering Review audit reports indicated the audit was conducted by well qualified and trained individuals (Section M7.1).

- The licensee's actions taken or planned for other maintenance rule implementation inspection findings, were generally appropriate (Section M8.9).

Engineering

- The inspectors concluded that in general, engineering activities to support plant operation were adequate (Section E1).

- Licensee personnel were actively pursuing a resolution of the concerns discussed in Information Notice (IN) 92-18, Potential for Loss of Remote Shutdown Capability During a Control Room Fire. The established fire watch patrols were appropriate (Section E2.1).

- The operation of Unit 2 with zero or low drywell-to-torus differential pressure does not impact any safety function associated with the Primary Containment. All Technical Specification and Final Safety Analysis Report requirements associated with torus-to-drywell vacuum breakers were met (Section E2.2).

Plant Support

- In general, radiological controls and health physics activities were adequate. Minor deficiencies were discussed with technicians and management personnel (Section R1.1).

- Radiological controls for high and locked-high radiation areas were maintained in accordance with Technical Specification requirements (Section R1.2).

- Contamination control associated with plant operation and maintenance activities continued to be a program weakness. An example of a violation for failure to follow procedure was identified for failure to implement contamination control practices (Section R1.2).

- Transportation activities for radwaste and material shipments met 10 CFR 71.5 and DOT 49 CFR 100-179 requirements (Section R1.3).

- In general, the radiation monitoring system equipment was calibrated appropriately (Section R2).

- Licensee programs to control, monitor and document liquid and airborne radionuclide effluent releases were maintained and implemented properly (Section R3).

- The Radiological Environmental Monitoring Program (REMP) sampling, analysis and reporting requirements were implemented effectively and demonstrated minimal environmental impact (Section R3).

- Projected offsite doses resulting from effluents were well within the limits specified in the Offsite Dose Calculation Manual and 40 CFR 190 (Section R3).

- An example of a violation was identified for the failure to implement maintenance procedures to ensure that Radiological Work Permit requirements and Health Physics coverage were adequate for the assigned work activity. A negative observation was identified for Health Physics personnel failure to demonstrate a questioning attitude to ensure radiological controls were adequate for an assigned work activity. A negative observation was also identified for the failure of personnel to identify and document several deficiencies surrounding a personnel contamination due to poor radiological controls (Section R4.1).

- Appropriate hazardous material training was provided to personnel handling and packaging radioactive materials for transport (Section R5).

- Audits of chemistry, radwaste and radiological control activities were performance based with identified issues tracked and corrected appropriately (Section R7.1).

- Counting room Quality Control activities were conducted in accordance with approved procedures and demonstrated detector and analysis system operability (Section R7.2).

- Observed supervisory oversight by the inspectors of REMP activities by onsite personnel was minimal (Section R7.2).

- The areas of security inspected met the applicable requirements (Section S2).

Report Details

Summary of Plant Status

Unit 1 began the report period at 100% rated thermal power (RTP). Power was reduced to about 80% RTP on June 21 to complete corrective maintenance for a leak on a turbine extraction steam valve. Power was returned to 100% RTP the same day. The unit operated at 100% RTP for the remainder of the report period, except for routine testing activities.

Unit 2 operated at 100% RTP throughout the report period, except for routine testing activities.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

Using Inspection Procedure 71707, the inspectors conducted reviews of ongoing plant operations. In general, the conduct of operations was professional and safety-conscious; specific events and observation are detailed in the section below.

O1.2 FeedWater (FW) Flow Control Unit 2

a. Inspection Scope (71707)

The inspectors were informed that Operations personnel had observed sudden step changes in FW flow indications for channel A and channel B on Unit 2. During a routine tour of the control room on June 17, 1997, the inspectors also observed a sudden FW flow step change. The inspectors observed the operators' response to the FW flow step change and monitored licensee actions to trouble shoot the problem. The inspectors also reviewed the applicable plant procedures for this problem.

b. Observations and Findings

Design Change Request (DCR) 95-055 for the new FW control system was installed on Unit 2 during the spring 1997, refueling outage. As a result of this DCR if a mismatch of about .5 million pounds mass per hour between the FW flow sensing channels occurs, the FW control circuit shifts from three element control (reactor vessel water level, feedwater flow, and steam flow) to single element control (reactor vessel water level only). The shift from three element to single element was designed to mitigate a transient following a FW flow transmitter failure. The DCR is scheduled to be installed on Unit 1 during the fall 1997, refueling outage.

The shift did not result in a plant transient and reactor level change was negligible. The inspectors observed that Operations personnel responded using applicable plant procedures. A review of procedures 34AR-603-132-2S, "Feedwater Control System Trouble," Revision (Rev) 2, and 34-SO-N21-007-2S, "Condensate and Feedwater System," Rev.29, revealed that the procedures provided adequate instructions for operators to respond to the problem.

The inspectors discussed the occurrences with Operations personnel and were informed that the amount of time that the mismatch was present varied. The FW flow variations lasted from about seven to forty-five minutes. The mismatches appeared to occur on a random bases and included both increasing and decreasing changes.

Due to multiple occurrences, the operators placed the FW control system in single element control. The licensee formed a problem solving team to review the mismatch, identify possible causes and make recommendations for corrective actions. Instrumentation to monitor system performance was installed.

Near the end of the inspection period, Engineering personnel informed the inspectors that the problem solving team was still evaluating the problem and had not made recommendations to site management. The team concluded that actual FW flow differences existed. The problem solving team determined that the difference in the A and B channel flow increased when Reactor Water Cleanup System (RWCU) was not in service. These observations were made by the problem solving team when the RWCU was out of service for corrective maintenance. The RWCU was placed in service following corrective maintenance and the FW control problem of shifting from three element to single element control, due to a FW flow mismatch, did not recur.

Operations personnel also observed a swap to FW single element control during Main Steam Isolation Valve (MSIV) testing. During this surveillance test, the MSIVs were closed about 10%, resulting in a flow mismatch between the main steam lines that was sensed by the FW control circuit. General Electric and corporate engineering personnel were evaluating a change to the FW control circuit setpoints to lessen the possibility of spurious swaps from three element to single element control.

The inspectors discussed with Operations management, the number of surveillance procedures that could cause a FW control circuit swap. The inspectors were informed that some surveillance procedures had been identified and a review of other procedures was being conducted.

The inspectors observed that all Operations personnel had not received specific instructions on what actions to take when surveillances were identified that may cause a swap of the FW control circuit. This was discussed with Operations management. Operations management later

informed the inspectors that more detailed instructions were provided to all Operations personnel.

The inspectors discussed with Engineering personnel whether or not the swapping of the FW control circuit had been identified during the DCR review process or whether this problem was unexpected. The inspectors were informed that the problem was unexpected and had not been discussed previously. Engineering personnel planned to evaluate the results of the problem solving team's findings to determine what corrective actions will be required.

c. Conclusions

Plant procedures provided adequate instructions and Unit 2 operators took prompt and correct actions in response to the feedwater control circuit swap from three element to single element control. The swap did not result in a plant transient. Engineering actions to troubleshoot the problem were appropriate.

O2 Operational Status of Facility and Equipment

O2.1 Engineered Safety Features (ESF) System Walkdowns

a. Inspection Scope (71707)

The inspectors used Inspection Procedure 71707 to walk down accessible portions of the following ESF system:

- Plant Service Water (PSW), Divisions 1 and 2 (Unit 2)
- PSW for 1A, 1B, and 1C Emergency Diesel Generators (EDG), Unit 1

The walkdown included a verification of valve alignment, condition of components in service, and general housekeeping for the associated areas.

b. Observations and Findings

The inspectors reviewed applicable drawings and Instrument Setpoint Index, Revision (Rev.) 47 for instruments that actuate control room alarms and automatic actions of the PSW strainers. The inspectors observed that the setpoint index for Unit 2 contained the necessary instrumentation for the PSW motor operated strainers and indicated applicable instrument setpoints. However, the inspectors could not locate the Unit 1 corresponding instruments and their applicable instrument setpoints. The inspectors discussed this issue with Operations and Engineering personnel. The inspectors were informed that the Unit 1 instruments should have been included in the setpoint index.

The inspectors observed that the setpoints for strainer differential pressure instruments for both units were different. The inspectors were informed that the strainers for Unit 1 were of a different manufacturer than Unit 2 and that the instrument setpoints were different. The inspectors verified that the Unit 1 instruments' setpoints were consistent with engineering and vendor recommendations.

The inspectors were later informed that the onsite engineering group issued As Built Notification (ABN) 97-181 to add the applicable Unit 1 instruments to the setpoint index.

c. Conclusions

The inspectors concluded that the failure to include Unit 1 PSW strainer differential pressure instruments and the associated setpoints in the instrument index was an oversight. Equipment alignment and component operability, material conditions, and housekeeping were acceptable in all areas inspected. Housekeeping conditions for the EDG rooms were excellent.

O4 Operator Knowledge and Performance

O4.1 Clearance Deficiency for Unit 1 Core Spray (CS) System

a. Inspection Scope (71707)

The inspectors reviewed procedure 30AC-OPS-001-0S, "Control Of Equipment Clearances and Tags," Rev.15, equipment clearance 1-97-159, for the B loop of Unit 1 CS and reviewed licensee actions with respect to a clearance deficiency.

b. Observations and Findings

On June 9, 1997, Nuclear Safety and Compliance (NSAC) management informed the inspectors that Unit 1 had entered TS action 3.0.3 due to both loops of CS being considered inoperable. The inspectors reviewed operator logs, equipment clearance sheets and discussed the CS clearance with clearance writers and Operations management. The inspectors observed from their reviews that clearance 1-97-159 was placed for maintenance activities on the 1B loop of CS. The clearance was placed and the required TS action statement was entered at 7:30 a.m. At about 1:40 p.m., control room operators received an alarm that indicated that the 1A CS Jockey Pump system, which maintains the CS system full and pressurized, had a low level. This indicated that the A loop of CS might not be properly filled and vented. Operators immediately declared the A loop of CS inoperable and initiated actions to fill and vent the system. During the time both loops were declared inoperable, TS 3.0.3 was entered. This TS action required that the unit be in Cold Shutdown within the next 37 hours. Following fill and venting activities, at about 2:00 p.m., operators declared the 1A loop operable and exited TS 3.0.3.

The inspectors observed that part of the clearance required closing the 1B CS pump suction valve and racking out its electrical supply breaker. Closing this valve isolated the inservice jockey pump suction source. The correct action should have been to realign the jockey pump system to the other CS loop and place the standby pump in service prior to isolating the inservice jockey pump.

The clearance was developed by personnel from a maintenance team which included experienced clearance writers. The clearance form did not contain, in Section 3, Amplifying Instructions, any caution or note concerning a review of the inservice jockey pump suction source prior to closing the CS pump suction valve. The inspectors brought this problem to the attention of the personnel who write and modify computer generated clearances and a note was added for the computer generated CS clearance form.

The inspectors observed that the computer generated clearance for the CS loop 1B was identical to the clearance that was implemented by Operations personnel. Neither contained any precautions concerning the jockey pump system. The inspectors discussed the clearance review process with clearance writers. The inspectors were informed that the common practice and procedural requirement for computer generated clearances was for the clearance drafter to verify the clearance using plant drawings to confirm the clearance boundaries were accurate. In this case, the review process was not adequate to identify the inservice jockey pump suction would be isolated and system alignment should be changed. The clearance was reviewed and approved by two Senior Reactor Operators prior to being placed and the deficiency was not identified.

The licensee initiated an engineering review of the problem to determine if the 1A loop of CS should have been declared inoperable. Engineering determined the 1A loop was not inoperable and applying TS 3.0.3 was a conservative decision. Engineering based their decision on a review of the TS required operability surveillance for the CS system fill and vent and a review of the instrument design configuration. Engineering determined that about 2 gallons of water may have escaped from the 1A CS loop between the time the inservice jockey pump was isolated and the standby jockey pump was started. The inspectors reviewed drawings of the alarm piping with Engineering personnel and observed that the low level alarm switch configuration was above the high point of the CS system piping. A low water level in the alarm system piping occurred and actuated the low level alarm prior to any level decrease in the primary system. The inspectors concluded the licensee's determination that the 1A CS system was operable, was reasonable.

The inspectors reviewed licensee performance for the past two years with respect to clearance problems. Clearance deficiencies were identified in Inspection Report (IR) 50-321, 366/97-03 and a VIO was identified in IR 50-321, 366/97-02 for operators' failure to identify correct clearance restoration steps. The inspectors concluded that the

circumstances surrounding the most recent clearance problem were different from the previous problems and would not have reasonably been prevented by previous licensee corrective actions.

For the most recent clearance problem, the clearance drafter and two clearance reviewers failed to implement steps 8.4.5 and 8.5.2 of procedure 30AC-OPS-001-0S. The procedure steps required in part, that the drafter of the clearance will determine the required isolation boundaries and fill out the equipment clearance sheet and that appropriate system Drawings, Electrical Diagrams, Load Lists, and System Operating Procedures will be used to determine the adequacy of the proposed clearance. In this case the clearance boundaries were not adequate with respect to ensuring other Emergency Core Cooling Systems (ECC) and support systems were not affected.

The inspectors were informed that Operations management established a problem solving team to evaluate this and other recent clearance problems. They were to determine root causes and make recommendations to prevent recurrence. Additionally, the clearance procedure was being revised to clarify some steps and provide an overall general enhancement.

c. Conclusions

The clearance drafter and two clearance reviewers failed to properly implement procedures to identify the correct clearance boundary for the Unit 1 B loop of Core Spray. As a result, other ECCS and support systems (1A loop of Core Spray and the jockey pump system) were affected by the clearance. This failure to follow procedure was identified as an example of Violation (VIO) 50-321, 366/97-05-01, Failure to Follow Procedure - Multiple Examples.

O7 Quality Assurance in Operations

O7.1 Review of Safety Audit and Engineering Review (SAER) Audit Report

a. Inspection Scope 71707

The inspectors reviewed SAER Report 97-SA-2, which was conducted by licensee personnel to verify compliance with and the effectiveness of the Quality Assurance program as applied to Reactor and Plant Startup of Unit 2, following the spring refueling outage.

b. Observations and Findings

Licensee personnel conducted the audit between April 16 and April 23, 1997. The audit focused on reactivity control, startup activities, surveillances, communications, control room manning, and team observations. Operations management provided input for specific items to be audited. The audit was conducted for around-the-clock shifts

during startup activities. No audit findings or audit comments were identified.

The inspectors reviewed auditor training requirements and training records and verified the auditors were qualified to conduct the audit.

The inspectors observed that the audit checklist and specific audit items were based upon current plant procedures and department instructions. Procedure requirements and audit techniques were clearly identified in the audit checklist.

The inspectors reviewed each audit element and assessed the audit conclusions.

c. Conclusions

The inspectors concluded that the SAER audit of operations during the Unit 2 startup activities was conducted by trained and qualified personnel. Procedure requirements and audit techniques were clearly identified in the audit checklist.

O8 Miscellaneous Operations Issues

08.1 Use of Overtime (OT)

a. Inspection Scope (71707)(92901)

The inspectors reviewed Unit 1 and Unit 2 TS Section 5.0, Administrative Controls, which establishes the requirements for OT use; Procedure 10AC-MGR-020-0S, "Overtime," Rev.0; and the licensee's use of OT during the spring 1997, Unit 2 refueling outage. The inspectors also conducted reviews of OT for selected portions of the years 1995, 1996, and 1997. The selected review for these years did not include OT used during refueling outages. The departments reviewed were Engineering, Security, Maintenance, and Operations. The inspectors discussed the results of the OT review with applicable management personnel.

b. Observations and Findings

The review of OT during the spring refueling outage did not identify any deficiencies. The OT was controlled in accordance with TS and plant procedures.

c. Conclusions

The inspectors concluded that site management maintained good control of overtime. Technical Specification and procedural requirements were met.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

a. Inspection Scope (62707)

The inspectors reviewed the applicable procedures, work packages and observed or reviewed all or portions of the work activities under the following maintenance work orders:

- 1-97-1077: install seismic support for Residual Heat Removal (RHR) Pump 1D electrical breaker
- 1-97-0787: change oil and meggar RHR Pump 1D motor
- 1-97-1078: install seismic support for RHR Pump 1B electric breaker
- 1-97-0507: inspect end turn windings on the generator for the 1C Emergency Diesel Generator (EDG)
- 1-97-0270: repair small fuel oil leak on 1C EDG
- 2-97-1506: change out Plant Service Water (PSW) Pump C mechanical seal

b. Observations and Findings

The licensee removed loop 1B of the RHR system from service to perform preventive maintenance, inspections, and implement a design change on the RHR pump electrical breakers.

The inspectors observed that the design changes for breaker seismic supports were implemented using work process sheets 97-011-E005 and E006, items 33 through 38 only. The installation and improvement of seismic supports is an ongoing initiative for system upgrade. The implementation was performed with engineering and supervisory oversight.

The inspectors observed partial performance of and reviewed selected maintenance work orders. Applicable procedures were used and were present at the work areas. The inspectors discussed the activities with workers, maintenance supervisors, and engineers. All personnel were knowledgeable of the work activities. The required action statements for Technical Specifications (TSs) out-of-service time were met.

The inspectors observed the routine generator end-turn winding inspection of the 1C EDG. The inspectors documented in previous inspection reports that the inspections were routinely made due to spacers between the windings becoming loose. The inspection was performed using the procedurally prescribed fiber optic and video system.

During the last Unit 1 refueling outage the generator portion of the 1A EDG was replaced. The generator was sent offsite for a detailed inspection to determine if other EDGs should also be replaced. The inspectors were informed that the results of the inspection indicated that the removed generator was in good condition. The inspectors were also informed that, based upon the results of the offsite inspection of EDG 1A, there were no plans to replace the generators associated with the 1C and the 1B EDGs at this time.

c. Conclusions

The inspectors concluded that maintenance activities completed were generally thorough and professional. The inspectors observed engineering and supervisory oversight was provided when necessary. No deficiencies were identified by the inspectors.

M1.2 Equipment Failures

a. Inspection Scope (62700)

To evaluate the licensee's actions related to equipment failures, the inspectors selected six Significant Occurrence Report (SOR) items, indicated below, to review for adequacy of: root cause determination; determination of the extent of the problem; 10 CFR 50.65 evaluation; and corrective actions taken and results achieved.

Commitment No.	Description
CO9700109	Failure of Reactor Core Isolation Cooling Valve 1E51F045 to open with control switch
CO9700124	Standby Liquid Control Pump 1A tripped while performing 34SV C41-002-1S
CO9700130	Drywell Radiation Monitoring Wide Range Monitor D11K621A spiking intermittently
CO9700372	Cracked 3/4-inch RHR system socket weld adjacent to 1E11-F3017/F3018
CO9700771	Traversing Incore Probe (TIP) control unit 2C51-J600-5D periodically fails the self test
CO9701516	Valves 2G11-F003 and 2G11-F004 failed local leak rate test

b. Observation and Findings

Drywell (DW) Radiation Monitoring Wide Range Monitor D11K621A was reported, in CO9700130, to be spiking intermittently. The licensee

determined that spurious spiking was the result of corrosion on electrical connectors. The connectors were subsequently replaced. SOR C09700130 stated in part: "The connectors outside the DW penetration for 2D11-K621A were found to be of the wrong type and were replaced in 01/97." When asked by the inspectors, how the wrong type of connectors were installed, the licensee indicated that they did not know but would find out. Pending the outcome of the licensee's investigation, this is identified as Inspection Followup Item (IFI): 50-321, 366/97-05-02, Installation of the Wrong Type of Connectors on Drywell Wide Range Monitor D11K621A.

Equipment failures examined were appropriately addressed except as noted above.

c. Conclusions

Equipment failures examined were generally appropriately addressed.

M2 Maintenance and Material Condition of Facilities and Equipment

M2.1 Housekeeping and Material Condition

a. Inspection Scope (62700)

During the Maintenance Rule Implementation Inspection, conducted in October 1996 (NRC IR 50-321, 366/96-12), a number of housekeeping and material condition discrepant items were noted. The team concluded that these were indicative of lack of attention to detail by Operations and Engineering personnel who frequently tour the areas. To evaluate the licensee's actions relative to those discrepant conditions, the inspectors conducted a walkdown inspection of a portion of the plant areas examined during the October 1996 inspection. The specific areas included: Diesel Generator Building 1B and 2A 4160 VAC Switch Gear Rooms; Intake Structure; and Units 1 and 2 Cooling Tower Batteries.

b. Observation and Findings

The inspectors noted the following

- The majority of the insulation associated with the traveling screens was still in the same damaged/crushed condition noted in October 1996. The missing insulation noted in October 1996, had been replaced. The licensee indicated that they were in the process of generating a Modification that will replace the damaged insulation and reroute the piping such that the piping will become less attractive stepping locations, thus affording the new insulation a better chance of remaining undamaged.

- A number of fasteners continued to be missing or loose on the guards and covers on the Traveling Screens.

- Several electrical cabinet doors associated with the traveling screens continued to be improperly secured such that the weather stripping/environmental seal was not compressed thereby potentially compromising the integrity of the components within.

- Both Unit 1 service water strainers continued to leak, although to a lesser extent than noted in October 1996.

- Verdigris was again noted on a number of terminals on the Unit 2 Cooling Tower Batteries 2R42S005.

- In the switch gear rooms located in the EDG building, the inspectors noted approximately ten panels that were improperly secured such that the weather stripping was not compressed thus not affording a proper seal. In addition, there were approximately ten panel closure plate bolts that were not snug tight, about four were stripped such that the bolt could be removed without turning.

c. Conclusions

The licensee had made little progress in correcting the material condition deficiencies identified during the Maintenance Rule Implementation Inspection of October 1996. As noted in October 1996, the discrepant material condition items were indicative of a lack of attention to detail by Operations and Engineering personnel who frequently toured the areas.

M3 Maintenance Procedures and Documentation

M3.1 Surveillance Observations

a. Inspection Scope (61726)

The inspectors reviewed the applicable procedures and observed all or portions of the following Unit 1 and Unit 2 surveillance activities:

- 34SV-E41-002-2S: High Pressure Coolant Injection (HPCI) Pump Operability
- 34SV-E41-002-1S: HPCI Pump Operability
- 42SV-R42-007-0S: Battery Charger Capacity Test

b. Observations and Findings

The inspectors documented in previous inspection reports observations of speed fluctuations for the HPCI turbine during surveillance testing. These observations were documented as Inspection Followup Item (IFI) 50-321, 366/96-15-03. Additional information is documented in Section M8.3 of this report.

During the recent surveillance activities, the inspectors observed similar speed fluctuations. Operators were aware that speed fluctuations may occur and had discussed the issue during the pre-job brief. The system engineer discussed system speed responses and stated that some speed changes were normal and were to be expected. The inspectors had discussed the speed changes with the system engineer and Operations personnel prior to the surveillance and concluded that the system engineer's explanation was reasonable.

The inspectors observed the battery charger test was for both chargers for the EDG 1B battery. The test was conducted in accordance with an approved procedure and with oversight from the system engineer. All involved personnel were knowledgeable of the system and test requirements.

c. Conclusions

For the surveillance activities observed, all data met the required acceptance criteria and the equipment performed satisfactorily. The surveillance tests were conducted in accordance with procedures and with oversight from supervisors and system engineers. All involved personnel were knowledgeable of the test and system performance requirements. Overall performance was generally professional and competent. No deficiencies were identified.

M3.2 Review of Unit 1 and Unit 2 Fire Penetration Surveillances

a. Inspection Scope (61726)

The inspectors reviewed procedure 42SV-FPX-019-1S, Rev. 2 and 42SV-FPX-019-2S, Revision (Rev.) 2, Penetration Seal Surveillance, and reviewed licensee actions to complete the surveillance requirements. The inspectors reviewed Units 1 and 2 Fire Hazards Analysis (FHA) to verify correct implementation of the fire protection surveillance requirements.

b. Observations and Findings

The inspectors observed that Quality Control (QC) personnel generally performed the surveillance procedures and fire protection engineers reviewed and approved the procedures for acceptability. The inspectors observed that surveillance requirement 2.1.1 of the FHA required that certain fire-rated assemblies and penetration sealing devices shall be verified operable at least once per 18 months by performing a visual inspection.

Section 7.7 of surveillance procedures 42SV-FPX-019-1S/2S, stated in part, that if any item in subsection 7.4 of the procedure is marked "Reject" or any other degradations were noted, the 10% sample of the seals being surveyed is rejected, and a second 10% sample must be requested from Fire Protection Engineering. The second sample will be

inspected in accordance with the steps of this procedure. If the second 10% sample fails the surveillance procedure, additional 10% samples will be inspected until a sample meets the acceptance criteria.

The inspectors observed that subsection 7.4 of the procedures included the visual inspection acceptance criteria that was required to be met for satisfactory completion of the surveillance. The acceptance criteria was identified in subsections 7.4.3.1 through 7.4.3.7. Any deficiencies were to be noted on Attachment 1 of the procedure and a Deficiency Card (DC) was to be initiated. The inspectors observed that Attachment 1 contained a column where accepted or rejected penetrations were identified.

The inspectors reviewed the surveillance procedures for Unit 1 and Unit 2 that were completed between January 30 and April 21, 1997. The inspectors observed that four different types of penetrations were identified as "rejected." The inspectors verified that DCs and MWOs were initiated to implement corrective actions for the rejected penetrations. One penetration seal was missing, one was not sealed on one side, one contained holes and one contained spaces between the seal and penetration boundary.

The inspectors reviewed surveillance procedures for both units since April 1991. Each of the surveillance procedures identified degradations that rendered some penetrations inoperable and required corrective maintenance to restore the penetrations back to operable status. The inspectors verified that the correct Fire Action Statement (FAS), for penetrations that required FAS were implemented.

The inspectors were not provided any documentation that a second 10% sample of fire protection penetrations was not conducted. The inspectors discussed this with fire protection engineering personnel. The licensee stated that a second 10% sample had never been conducted. The fire protection engineers interpretation of the procedure step was if the fire protection engineer detected a trend of a particular type of penetration seal, a second 10% surveillance sample would be completed. The inspectors concluded that this interpretation was not consistent with the wording of the procedure.

The inspectors also identified several procedure weaknesses. These included the following:

- Procedure 42FP-FPX-014-0S, "Installation and Repair of Silicone Foam Seals," contained specific installation requirements and identified the required spacing between multiple penetrations. The procedure also identified that if penetrations were too congested to complete a rejection form. The surveillance procedure did not identify the separation criteria requirement as an item to review for surveillance acceptance criteria.

- Step 7.4.1 of procedure 42SV-FPX-019-1S/2S stated in part, that visual inspection of each type seal includes, but will not be limited to the items noted in steps 7.4.3.1 through 7.4.3.7. The procedure implied that other items may be observed for acceptance criteria but provided no guidance for such items.

- Step 7.4.3.2 of procedure 42SV-FPX-019-1S/2S stated in part, (observe that) no apparent change in appearance or abnormal degradation of seals and/or damming material. The procedure offered no guidance as to what constituted changes in appearance or what abnormal degradation may include.

- Step 7.11 of procedure 42SV-FPX-019-1S/2S indicated the Fire Protection Engineer will review the surveillance results and perform a walkdown sample of penetration seals listed on Attachment 1. There were no procedure requirements to document the sample walkdown, how many or which seals were reviewed or the results of the review. The procedure did not indicate whether or not seals that were identified as rejected or degraded should be reviewed.

The inspectors observed that the last surveillances were completed for Unit 1 and Unit 2 on about April 19, 1997. The inspectors observed that procedure 42SV-FPX-019-1S for Unit 1, and 42SV-FPX-019-2S for Unit 2, had incorrect cover sheets for the data package. Unit 1 cover sheet was on Unit 2 data and vice versa. Inspectors brought this to the attention of a fire protection engineer who corrected the problem.

As of June 6, 1997, fire protection engineers had not reviewed the surveillances completed on April 19. The inspectors discussed with Engineering management how the FHA reporting requirement to submit a special report to the Safety Review Board within the next 30 days if an inoperable penetration is not repaired within 14 days, was being met. The inspectors were informed that penetrations were usually repaired in a timely manner however, this could be a potential vulnerability. The problem was to be reviewed by Engineering personnel. The inspectors did not identify problems caused by the delayed reviews.

The inspectors attempted to locate the previous 18 months surveillances in document control. The document control clerk was unable to locate the documents. Fire protection engineering personnel had a copy of the surveillances in the office work location. The inspectors were not able to determine if the previous surveillances were ever submitted to document control.

The inspectors documented a weakness in the administrative aspects of the fire protection program in IR 50-321, 366/97-01. A Notice of Violation was also identified for failure to implement the FHA

requirements for transient combustible permits. The above problems were identified as additional concerns of the administrative aspects of the FP program implementation.

c. Conclusions

The inspectors concluded that the failure to complete additional 10% sampling of fire-rated assemblies and penetration devices in accordance with section 7.7 of surveillance procedures 42SV-FPX-019-1S/2S and section 2.1.1 of the Fire Hazards Analysis and Fire Protection Program Surveillance requirements did not meet requirements. This was identified as an example of VIO 50-321, 366/97-05-01, failure to follow procedure - multiple examples. Additional concerns were identified with the clarity of some surveillance procedure requirements and with some administrative aspects of the fire protection program.

M7 Quality Assurance in Maintenance Activities

M7.1 Audits

a. Inspection Scope (62700)

To evaluate the licensee's Audit Program as it relates to maintenance, the inspectors requested copies of all audits and self assessments conducted in the maintenance area during the previous year. The inspectors reviewed the three audits provided.

b. Observations and Findings

Audit 96-SPR-1, Audit of Special Processes, findings included: incomplete weld sketches; Temporary Repair procedure not used; and Post Weld Heat Treatment problems.

Audit 96-SA-4, Contractor Control, findings included: administrative controls not satisfied; errors in the specification of ANSI Standards; contractor pre-job briefings did not meet OSHA requirements; and contractor Work Order procedural problems.

Audit 96-SA-8, Plant Housekeeping and Material Condition, findings included: housekeeping deficiencies noted in U1 & U2 Turbine Buildings, U2 Reactor Building, Control Room, and Laundry Storage Area; and tools including wheeled carts were improperly stored in proximity of safety related equipment. Appropriate corrective actions were taken or planned.

c. Conclusions

Maintenance was subjected to independent audits, with appropriate action taken for identified weaknesses.

M8 Miscellaneous Maintenance Issues (92902)

M8.1 (Closed) IFI 50-321, 366/96-14-04: Potential Deficiencies in the HPCI Surveillance Procedure. This item was opened pending additional observations of operator and HPCI system performance during surveillance activities. The inspectors observed that the use of the Safety Parameter Display System (SPDS) to monitor suppression pool temperature during surveillance activities was consistent among the operating crews. Engineering personnel informed the inspectors that the SPDS gives a more accurate suppression pool temperature indication than the safety related recorder. Based upon the inspectors' review of licensee's actions and observations of the operators' consistent use of the SPDS, this item is closed.

M8.2 (Closed) Violation 50-321, 366/96-14-03: Failure to Implement Configuration Control Requirements - Multiple Examples. The licensee responded on February 4, 1997, by correspondence. Additional examples of this violation are discussed in Section E8 of this report. The licensee's response indicated that a misleading label on the trip device selector switch contributed to the incorrect setting. Initial corrective actions were discussed in IR 50-321, 366/96-14 (Section E2). DCR 96-058 was implemented as part of the followup corrective actions. Based upon the inspectors' review of licensee's actions, this violation example is closed.

M8.3 (Closed) IFI 50-321, 366/96-15-03: Resolution of Reactor Core Isolation Cooling (RCIC) and High Pressure Coolant Injection (HPCI) turbine speed control drift. During the report period the inspectors observed the operation of the Unit 1 and Unit 2 HPCI system. Part of the test was for Inservice Testing (IST) purposes. One requirement of the test was to maintain the speed of the turbine at 3900 rpm plus or minus 1%. The inspectors concluded, based on this observation and previous observations, that during tests of the HPCI and RCIC systems the speed will drift and did not result in a system operability concern. The inspectors observed that the plant operators had been made aware of speed drifts. Based on the inspectors' observations and review of licensee actions, this item is closed.

M8.4 (Open) Violation 50-321, 366/96-12-01: Failure to Include All Structures, Systems, and Components in the Scope of the Maintenance Rule as Required by 10 CFR 50.65. By letter dated December 19, 1996, the licensee denied this violation. Subsequently, by letter dated March 5, 1997, the licensee stated that they had determined that it was necessary to resolve the issues discussed in their initial response of December 19, 1996. The NRC responded by letters dated February 10, and April 2, 1997. As a result, the licensee indicated that they would include the communications, non-appendix R emergency lighting, Appendix R emergency lighting, and cooling tower systems to the maintenance rule program. The licensee indicated that they would be in full compliance by September 1, 1997. This item remains open.

M8.5 (Open) Violation 50-321, 366/96-12-02: Failure to Establish Adequate Performance Criteria for SSC Risk Significant Functions. By letter dated December 19, 1996, the licensee admitted that additional performance criteria could have been established for the primary containment and primary containment isolation, feedwater and condensate, circulating water, electro-hydraulic control, and primary containment chilled water systems. The licensee has provided availability performance criteria for those systems.

The licensee's letter dated December 19, 1996, denied that the performance criteria for the AC and DC electrical and analog transmitter trip systems were not properly established. Subsequently, by letter dated March 5, 1997, the licensee stated that they had determined that it was necessary to resolve the issues discussed in their initial response of December 19, 1996. The NRC responded by letters dated February 10, and April 2, 1997. As a result, the licensee indicated that they would establish appropriate additional performance criteria for the AC and DC electrical and analog transmitter trip systems. The licensee indicated that they would be in full compliance by September 1, 1997. This item remains open.

M8.6 (Closed) Violation 50-321, 366/96-12-03: Failure to Follow Procedure for Implementation of the Maintenance Rule. By letter dated December 19, 1996, the licensee admitted to the violation and attributed it to personnel error. The licensee identified the failures as required by the Maintenance Rule and conducted a root cause analysis on the incident. The licensee determined that this was an isolated occurrence and that the individual responsible, is no longer a licensee employee. The inspectors determined that the licensee had conducted an appropriate survey and determined the extent of the noncompliance, and took appropriate actions to correct the condition and prevent its recurrence.

M8.7 (Open) IFI 50-321, 366/96-12-04: Failure to Provide Adequate Procedure for Implementation of Maintenance Rule Requirements. The licensee opened Action Item Tracking (AIT) No 96-261 with a due date of January 5, 1998. AIT No 96-261 stated: Monitor the resolution of this issue by the NRC and EPRI and once a position has been taken evaluate this position and implement any corrective actions as necessary to bring plant Hatch into compliance with regulatory requirements. Regulatory Guide (RG) 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Plants," Rev.2, issued March 1997, paragraph 1.2, provided specific guidance in the area in question, that of the role of organizations, other than the Maintenance department, as it relates to Maintenance Preventable Functional Failures (MPFF)s. The licensee was currently in the process of revising Administrative Control Procedure ACP 40AC-ENG-020-0S, Rev.2, "Maintenance Rule (10 CFR 50.65) Implementation." The licensee indicated that the guidance of RG 1.160, Rev.2 Paragraph 1.2, will be incorporated in this revision. This item remains open.

M8.8 (Open) IFI 50-321,366/96-12-05: Followup on Licensee Actions to Provide Performance Criteria for Structures After Industry Resolution of this Issue. The licensee opened AIT No 96-262 with a due date of January 7, 1998. AIT No 96-262 stated: Monitor the resolution of the structural monitoring issue by the NRC and EPRI. Once a position has been taken evaluate this position and implement any corrective actions as necessary to bring plant Hatch's program into compliance. RG 1.160, Rev.2, issued March 1997, paragraph 1.5, provides specific guidance in the area in question, that of monitoring structures.

The licensee indicated that a preliminary draft of RG 1.160, Rev.2, was used for guidance to write licensee document, Structural Monitoring Program for the Maintenance Rule, Rev.1, dated September 1996. It should be noted that this document was available at the time of the October 1996 Maintenance Rule Implementation Inspection, notwithstanding, this IFI was opened as a result of that inspection.

Of concern to the inspectors was the fact that Structural Monitoring Program for the Maintenance Rule, Rev.1, provides condition monitoring acceptance criteria in vague terms e.g., potential significant structural impact, considered serious, potentially significant, possible structural impact, and structural integrity may eventually be compromised. Where as Regulatory Guide 1.160, Rev. 2 provides guidance in terms of the structure's ability to meet its design basis.

This item remains open.

M8.9 Licensee Actions Associated With Other Adverse Maintenance Rule Implementation Inspection findings

a. Inspection Scope (40500) (62700)

To evaluate the licensee's actions related to identified weakness and other negative Maintenance Rule Implementation Inspection findings, the inspectors examined the following:

b. Observations and Findings

- A weakness was identified in NRC Inspection Report 50-321, 366/96-12 Section M1.6, associated with fragmented documentation for review of problems and corrective actions for the Unit 2 primary Containment Chilled Water System. To address this issue the licensee included in the monthly Maintenance Rule Report reference to applicable documents for the (a)(1) systems e.g., Clearance No., Deficiency Card No., Significant Operating Report No., Maintenance Work Order No., and Licensee Event Report No.

- IR 50-321, 366/96-12, Section M1.4 identified that the licensee had not established adequate performance criteria for several risk significant SSC functions, balancing reliability and

unavailability for those functions would not be possible. To address this issue, the licensee reviewed all risk significant SSCs and assured that each system included performance criteria for both reliability and availability. The systems to which availability criteria was added included: primary containment isolation, feedwater and condensate, circulating water, electro-hydraulic control, primary containment chilled water, primary containment, and main steam.

- Many findings or deficiencies discussed in audit notes were not documented as findings or entered into the licensee's corrective action program. The lack of documentation of findings or deficiencies was considered a weakness in the licensee's audit process. Comments in the licensee's audit space were items that were of only minimal significance for which no response was expected. To address this issue the licensee stopped the practice of including comments in audit reports.

- The omission of two risk significant functions from the matrix was considered a weakness. The licensee indicated that they had evaluated the two systems, and determined that the scoping of the Remote Shutdown Panel (RSP) was appropriate. They indicated that they would amend the Maintenance Rule Scoping Manual to explain the differences between the PRA assumptions for the RSP and the scoping of the RSP. The diesel generator building exhaust fan system was still under evaluation. The licensee indicated that this issue would require a procedure modification.

- The lack of assessments for non-risk significant SSC function combinations was considered a weakness. The licensee indicated that they were comfortable with the situation as it now exists and anticipate no changes in this area.

- Misleading guidance regarding priorities following emergent failures was considered a weakness. The licensee indicated that with their existing software, the existing guidance was the best available.

The failure to perform a sensitivity analysis when initially establishing reliability performance criteria was considered a weakness. In addition, the failure to perform additional risk ranking using Maintenance Rule performance criteria new data was considered a minor weakness. The licensee indicated that after they re-analyze their safety assessment risk model they will re-do the risk ranking and sensitivity analysis, currently planned to be completed in the first quarter of 1998.

c. Conclusions

The licensee's actions taken or planned associated with other adverse maintenance rule implementation inspection findings, were generally appropriate.

III. Engineering

E1 Conduct of Engineering (37551)

On-site engineering activities were reviewed to determine their effectiveness in preventing, identifying, and resolving safety issues, events and problems.

The inspectors concluded that in general, engineering activities to support plant operation were adequate.

E2.1 Engineering Followup Concerning Electrical Short Circuits

a. Inspection Scope (92903) (71707)

Engineering personnel informed the inspectors that a recent additional review of control room electrical systems for motor operated valves revealed conditions described in Information Notice (IN) 92-18: "Potential for Loss of Remote Shutdown Capability During a Control Room Fire." The inspectors observed and reviewed the activities initiated by corporate engineering, onsite engineering and Operations personnel to correct the problem.

b. Observations and Findings

The licensee's initial evaluation of the IN was completed on May 15, 1992, and was very limited. This inspector observation was documented in Inspection Report 50-321, 366/97-01. On November 25, 1996, the licensee initiated an engineering request to perform a reanalysis of the IN. The most recent findings were a result of the reviews conducted during the reanalysis.

The IN discusses control room short circuits, referred to as hot shorts, that could result in valve actuation during some postulated fire conditions.

The inspectors observed that two Design Change Requests (DCR), one per unit, were developed and 16 Fire Action Statements (FAS) were implemented. The inspectors observed that DCR 97-016, for Unit 1 and 97-017 for Unit 2, identified the fire area/zones, the valves, by master parts list designation, and the electrical circuits that were affected as described in the IN. The DCRs were scheduled to be implemented during the next refueling outage for each unit.

The inspectors reviewed the scope of the DCRs and observed that corrective actions were to reroute cables to eliminate the possibility of hot shorts occurring within a cable. The inspectors were informed that corporate engineering was still reviewing systems and components that were affected and that the list of concerns would be adjusted as necessary, based upon the additional reviews. Additional actions of the DCR's were the following:

- DCR 97-016: correct six fire area/zones, 15 valves, and 16 electrical circuits for Unit 1

- DCR 97-017: correct seven fire area/zones, 34 valves, and 52 electrical circuits for Unit 2

The inspectors observed that in the scope of the modifications were valves and electrical circuits in the Residual Heat Removal (RHR), High Pressure Coolant Injection (HPCI), Reactor Core Isolation (RCIC), and Plant Service Water (PSW) systems.

The inspectors observed that nine of the FASs were for Unit 1, 1-97-24, 25, 26, and 43 through 48, and seven for Unit 2, 2-97-59 through 65. The inspectors observed that FAS 1-97-24, 25 and 26 were issued on April 10, 1997, to address the control, cable spreading, and computer rooms and the remainder of the FASs were issued on May 16.

The inspectors reviewed the FASs and observed that they were issued to cover specific fire area/zones of the plant and contained both safety and non-safety related equipment. Among the FAS reviewed were the following:

- 1-97-025: the FAS was issued for fire area/zone 0024B, the computer room, and was one of the initial FAS

- 1-97-043: the FAS was issued for fire area/zone 1203F, the 130 foot (ft.) elevation of the reactor building south, and contains circuits for valves in the Unit 1 RHR, HPCI and RCIC systems

- 1-97-048: the FAS was issued for fire area/zone 1205N, the 164 ft. elevation of the reactor building heating, ventilation, and air conditioning room, and contains a circuit for a valve in the Unit 1 RHR system

- 2-97-062: the FAS was issued for fire area/zone 2205N, the 164 ft. elevation of the drywell chiller room, and contains circuits for valves in the Unit 2 RHR and RCIC systems

- 2-97-065: the FAS was issued for fire area/zone 2205F, the 130 ft. elevation of the reactor building south, and

contains circuits for valves in the Unit 2 RHR and RCIC systems

The inspectors observed that the FAS required a one hour fire watch patrol. The inspectors reviewed the applicable Fire Hazards Analysis and Fire Protection Program requirements and verified that the correct FAS were implemented.

The inspectors discussed this item with corporate and onsite management in terms of the plant being outside design basis. The inspectors also inquired as to the reportability of this item under 10 CFR 50.72 or 10 CFR 50.73. The licensee determined the deficient conditions were not reportable. The inspectors reviewed the licensee's non-reportability evaluation which stated in part, that "there is no indication that the NRC intends licensees to report under this paragraph" (paragraph (a)(2)(ii) of 10 CFR 50.73 and an additional reference to NUREG-1022 Part V), "events which are merely hypothesized to occur, particularly when the hypothesis depends upon multiple layers of incredible assumptions." Similar rationale was used for paragraph (a)(2)(v)/(vi) of 10 CFR 50.73.

Pending the inspectors' detailed review of the reporting requirements, this issue is identified as Unresolved Item (URI) 50-321, 366/97-04: Determine the Reportability of Licensee Identified Deficiencies With Respect to IN 92-18, Potential for Loss of Remote Shutdown Capability During a Control Room Fire.

c. Conclusions

The inspectors concluded that licensee personnel were actively pursuing a resolution of the concerns discussed in Information Notice 92-18: Potential for Loss of Remote Shutdown Capability During a Control Room Fire. Unresolved Item (URI) 50-321, 366/97-04: Determine the Reportability of Licensee Identified Deficiencies With Respect to IN 92-18, Potential for Loss of Remote Shutdown Capability During a Control Room Fire, was identified. The established fire watch patrols were appropriate.

E2.2 Review of Unit 2 Drywell-to-Torus (DW/T) Differential Pressure

a. Inspection Scope (37551) (71707)

The inspectors reviewed documentation and held discussions with licensee personnel concerning the circumstances associated with the zero or low differential pressure (DP) between the Unit 2 drywell and torus.

b. Observations and Findings

The operating crew on Unit 2 observed that the DW/T DP was zero or very low compared to its value prior to the Unit 2 spring refueling outage of

1997. A historical pattern of containment pressurization followed by venting existed. Based upon questions raised by the operating crew, Nuclear Safety and Compliance (NSAC) conducted an evaluation to determine the impact of operating with a zero or discernibly small DW/T DP. Including whether or not containment integrity existed based upon the zero DP.

The inspectors reviewed the results of the NSAC's evaluation dated April 24, 1997. The evaluation concluded the following:

- The vacuum breakers between the drywell and torus were operable with acceptable leakage characteristics,
- There was no leakage from the primary containment that exceeds 10 CFR 50, Appendix J requirements, and
- Low or zero DW/T DP does not impact any safety function associated with the Primary Containment.

The NSAC's evaluation also indicated that a review of data confirmed that the historical pattern of containment pressurization followed by venting was observable until the drywell was inerted following the recent Unit 2 refueling outage. Since this refueling outage, the drywell pressure remained fairly constant. The licensee believes that the fairly constant drywell pressure was due to less nitrogen leaking into the drywell from the drywell pneumatic system as a result of the maintenance performed on various drywell pneumatic valves during the Spring 1997 refueling outage.

The inspectors reviewed the bases for Technical Specification (TS) Surveillance Requirements 3.6.1.8.1 for the Suppression Chamber-to-Drywell Vacuum Breakers. The bases stated that with a closed indication for the vacuum breakers and the DW/T DP remaining steady at zero, then an alternate method for verifying that the vacuum breakers are closed must be performed as outlined in the Technical Requirements Manual (TRM), T3.6.1., "Suppression Chamber to Drywell Vacuum Breaker Position Indication." A review of TRM T3.6.1 by the inspectors indicated that the alternate method was to demonstrate that the drywell-to-suppression chamber (torus) DP can be maintained greater than 0.5 psid for 1 hour without makeup. The TS 3.6.1.8 required action time for this confirmation was within 2 hours of discovery of the condition (zero DP) and every 14 days thereafter.

The inspectors reviewed Surveillance Procedure 34SV-T48-004-2S, "Drywell to Suppression Chamber Leakage Test," Revision (Rev.) 2. This procedure had temporary change 97-168 incorporated on April 24, 1997, to add the 14 day requirement for DW/T torus vacuum breaker leakage test when operating at zero DP between the drywell and torus. The license is performing this surveillance recommended every 14 days due to the zero or discernibly low drywell to torus DP.

The inspectors discussed with Operations supervision the use and testing of the drywell/torus differential pressure system. This system was sometimes referred to as the "pump back" system. The pump back system was originally designed to maintain the drywell pressure slightly higher than the torus in order to lower the water column in the downcomer pipes that extend into the water in the torus. The pump back system is not used now due to the installation of additional reinforcements on the torus.

Engineering personnel informed the inspectors that Design Change Request (DCR) 81-109 provided information on the additional reinforcements installed on the torus that reduced its susceptibility to the higher loadings caused by the jet forces during initial vent clearing following a LOCA. The inspectors verified that this DCR implemented reinforcements of the DW/T vent header and the downcomer legs. Engineering also stated that the components necessary for automatic operation of the system were "retired in place" on Unit 2 and was physically removed on Unit 1 under DCR 84-316.

The inspectors reviewed Unit 2 Final Safety Analysis Report (FSAR), Sections 3.8.2.8.2.3, Drywell to Pressure Suppression Chamber Bypass Area Tests, Supplement 3.8B, Plant Unique Analysis of Mark 1 Containment System, and 6.2.1.2.1.6.1, Drywell to Suppression Pool Vacuum Breakers. The FSAR review provided no indications of requirements for the DW/T DP (pump back) system.

c. Conclusions

The inspectors concluded that the Unit 2 operation with zero or low DW/T differential pressure does not impact any safety function associated with the Primary Containment. All TS requirements associated with torus-to-drywell vacuum breakers were met.

E8 Miscellaneous Engineering Issues (92700) (92903)

E8.1 (Closed) Violation 50-321, 366/96-14-03: Failure to Implement Configuration Control Requirements - Multiple Examples. The licensee responded to this violation by correspondence dated February 4, 1997. Based upon the inspectors' review of licensee actions, this item is closed.

E8.2 (Closed) LER 50-321/97-02: Less than Adequate Procedure Results in a Condition Prohibited by the Technical Specifications (TS). This issue was discussed in IRs 50-321, 366/97-01 and 50-321, 366/97-03. Based on the inspectors' review of licensee actions, this LER is closed.

IV Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 Observation of Routine Radiological Controls

a. Inspection Scope (71750)

General Health Physics (HP) and radiological control activities were observed during the report period. This included locked high radiation area doors, proper radiological posting, and personnel frisking upon exiting the Radiological Control Area (RCA). The inspectors made frequent tours of the RCA and observed activities.

The inspectors concluded that in general, radiological controls and HP activities were adequate. Minor deficiencies were discussed with technicians and management personnel.

R1.2 Radiological Controls

a. Inspection Scope (83750)

Radiological controls associated with ongoing Radioactive Waste (radwaste) processing operations and storage areas were reviewed and evaluated by the inspectors. Reviewed program areas included container labels, area postings, high and locked-high radiation area controls, and procedural and Radiation Work Permit (RWP) guidance. Established program controls and their implementation were compared against Updated Final Safety Analysis Report (UFSAR) details and documented requirements in applicable sections of Technical Specifications (TSs), and 10 CFR Part 20.

During the week of June 23, 1997, the inspectors made frequent tours of the RCAs. External and internal exposure controls and contamination controls associated with specific radwaste processing and storage areas were observed and evaluated in detail. In particular, radiation control activities associated with inspection and replacement of the Unit 1 (U1) condensate filter elements performed in accordance with Maintenance Work Order (MWO) Number (No.) 19701437, and RWP No. 097-0021, Rebuild\Replace Filter Demins and Support, Revision (Rev.) 0, dated January 3, 1997, were reviewed and discussed with responsible Health Physics (HP) staff and supervisors. The inspectors directly observed worker performance and discussed results of radiation and contamination surveys conducted for selected equipment and facility areas.

b. Observations and Findings

High and locked-high radiation area controls were verified to be implemented in accordance with TS requirements. Postings for radiologically controlled areas were proper and in accordance with TS or

10 CFR 20 Subpart J requirements. Containers holding radwaste, contaminated materials and equipment were labeled in accordance with 10 CFR 20.1904 requirements. Excluding U1 condensate maintenance activities, radiation controls associated with ongoing radwaste processing, storage and shipping operations were adequate and conducted in accordance with applicable RWPs and procedures. In addition, cleanliness and housekeeping within the radwaste processing and storage areas were considered to be acceptable.

During facility tours on June 26, 1997, the inspectors observed the following poor radiological and contamination control practices associated with the U1 condensate demineralizer filter maintenance. During disassembly of a containment tent used as an engineering control to prevent spread of airborne contamination, two workers were observed standing in two 55 gallon drums located within the roped-off contaminated work area. The workers were physically stomping on the materials within the barrels to enhance compaction. At the same time, rollup door T15 to the area was open, thereby allowing air flow into and across the potentially contaminated work area into a non-contaminated area. No engineering controls were established, no representative air samples were collected, nor was the work performed under continuous HP coverage. Cognizant licensee representatives informed the inspectors that the materials within the drums consisted of potentially contaminated fabric which had been used to construct the tent surrounding the U1 condensate filter maintenance area. Subsequently, the inspectors were informed that eight workers associated with the U1 condensate filter work activities were determined to be contaminated externally, 3000 to 30000 disintegration per minute per probe area, after conducting RCA exit surveys. No internal contamination was detected for whole body counts conducted on the affected workers. Gross contamination surveys, large area masslin wipes, for areas outside of the U1 condensate work area indicated contamination levels of 1000 to 100000 disintegration per minute per masslin wipe.

Review of the applicable RWP guidance and discussions of worker knowledge with responsible HP personnel indicated that maintenance workers were expected to be aware of potential contamination of the enclosure material based on previous work experience. Thus, disassembly of the enclosure prior to completion of contamination surveys and decon activities was not expected by the HP staff. Based on their previous similar work experience, the involved workers were expected to understand precautions to minimize spread of contamination including proper compaction of contaminated material and preventing air flow across a contaminated area. In addition, the HP technician providing intermittent coverage in accordance with the RWP was not informed that the workers were going to dismantle the enclosure.

TS 5.4 required that written procedures be established, implemented, and maintained covering activities delineated in Appendix A of Regulatory Guide (RG) 1.33, Rev. 2, dated February 1978. Regulatory Guide 1.33,

Appendix A "Typical Procedures for Pressurized Water Reactor and Boiling Water Reactors," Paragraph 7.e required radiation protection procedures for Radiation Work Permit System and for Contamination Control. Health Physics procedure 60AC-HPX-004-0S, "Radiation and Contamination Control," Rev. 14, effective October 15, 1996, specified that HP will take measures to minimize migration of high contamination to low or uncontaminated areas; will initiate controls, to ensure the spread of contamination is minimized; will perform non-routine radiation and contamination surveys as required, to support operation and maintenance; and will perform airborne surveys during radioactive work which is expected to cause airborne radioactivity unless constant air monitors are provided. The inspectors identified the failure to implement proper contamination controls, surveys and HP coverage for dismantling of the U1 condensate demineralizer filter tent as an example of Violation (VIO) 50-321/97-05-01: failure to follow procedures - multiple examples.

c. Conclusions

Radiological controls for high and locked-high radiation areas were maintained in accordance with TS requirements

Contamination control associated with plant operation and maintenance activities continued to be a program weakness with a violation of NRC requirements identified. The violation was an example of violation 50-321, 366/97-05-01, Failure to Follow Procedure - Multiple Examples.

R1.3 Radioactive Waste and Material Transportation Activities

a. Inspection Scope (86750, TI2515/133)

The inspectors reviewed RC program activities associated with packaging and shipping of radioactive material and waste to either vendor processing facilities or directly to a licensed burial facility. The review included evaluation and verification of radwaste classification activities, and review of shipping documents. In addition, the inspection verified and evaluated implementation of revised 49 CFR Parts 100-179 and 10 CFR Part 71 regulations

Records for radwaste and material shipments made between April 1 through June 23, 1997, were reviewed and discussed. In particular, selected documentation associated with the following shipments were reviewed and discussed with responsible licensee representatives.

- Shipment No. 97-6007, Radioactive material, Low Specific Activity (LSA), n.o.s.; 7 UN2912, Fissile Excepted, April 28, 1997.

- Shipment No. 97-1010, Radioactive material, LSA, n.o.s. 7, UN2912, Fissile Excepted RQ, April 30, 1997.

- Shipment No. 97-1012, Radioactive material, LSA, n.o.s. 7, UN2912, Fissile Excepted, May 7, 1997.

- Shipment No. 97-1014, Radioactive material, LSA, n.o.s. 7, UN2912, Fissile Excepted RQ, May 23, 1997.

Procedural guidance specified in Radiation Protection (RP) procedure, 62RP-RAD-011-OS, "Shipment of Radioactive Material," Rev. 10, effective June 23, 1997, was reviewed and evaluated against applicable requirements in 10 CFR Part 20, 10 CFR Part 61, 10 CFR Part 71 and the revised 49 CFR Parts 100-179 and 10 CFR Part 71 regulations.

b. Observations

The licensee's procedural guidance met applicable regulatory requirements. Recent revisions to 49 CFR Parts 100-179 and 10 CFR Part 71 regulations were implemented as required. The inspectors verified that changes to 49 CFR Parts 100-179 and 10 CFR Part 71 regulations were incorporated into approved procedures and implemented as required. For the shipping records reviewed, the inspectors verified that shipping paper documentation was completed and maintained as specified.

c. Conclusions

Transportation activities for radwaste and material shipments met 10 CFR 71.5 and recently revised Department of Transportation (DOT) 49 CFR 100-179 requirements.

R2 Status of Radiological Protection and Chemistry Facilities and Equipment

R2.1 Radiation Monitor System Calibrations

a. Inspection Scope (84750)

The inspectors reviewed and evaluated the adequacy of calibration guidance and resultant data for selected Radiation Monitoring System (RMS) process and area detectors. Selected source and electronic calibration data were reviewed and discussed for the following Unit 2 systems: drywell wide range monitor A and B, i.e., the Containment High Range Monitors (CHRMs); liquid process; main steamline monitors and main stack gaseous effluents.

The RMS calibration guidance and results were evaluated against applicable sections of the FSAR, Technical Specification (TS) and Offsite Dose Calculation Manual (ODCM) requirements. In addition, guidance for the CHRMs was compared against special calibration requirements specified in NUREG 0737, Clarification of Three Mile Island (TMI) Action Plan Requirements, Table II.F.1-3 Containment High Range Monitors (CHRMs).

b. Observations and Findings

Excluding the CHRMs, no calibration concerns were identified. Surveillances were conducted at the required frequencies and the reported results were acceptable.

For the CHRMs data, the inspectors noted that the source used to conduct the *in situ* calibration met the 1 -10 R/hr range specified in NUREG 0737, Table II.F.1-3. However, the *in situ* calibration by electronic signal substitution as specified in procedure 57SV-CAL-007-2S, "Drywell High Range Radiation Monitor Loop Calibration," Rev. 1, was conducted for four and not all of the six range decades above 10 Roentgens per hour (R/hr) as specified in NUREG 0737, Table II.F.1-3. Based on a review of a similar issue at another Southern Nuclear Operating Company nuclear facility, licensee representatives concluded that their test data for four ranges demonstrated operability of the monitor. Further, no changes were made to meet the explicit requirements outlined in NUREG 0737, Table II.F.1-3. Licensee representatives were unaware if an exemption was requested from meeting the specific requirements of NUREG 0737, Table II.F.1-3, but planned to review appropriate licensing information, and provide that information to the inspectors. The inspectors noted that the adequacy of their review of procedure guidance to meet the explicit requirements of NUREG 0737, Table II.F.1-3 would be considered an Unresolved Item (URI) 50-321, 50-366/97-05-05, evaluate adequacy of CHRMs electronic signal substitution calibrations following additional review of the licensee response to Generic Letters 82-05 and 82-10 dated March 17, 1982 and May 5, 1982, respectively.

c. Conclusions

In general, RMS equipment was calibrated appropriately.

The adequacy of the licensee's review to meet the CHRMs electronic signal substitution to meet NUREG 0737 requirements was identified as an URI: 50-321, 366/97-05-05: evaluate adequacy of CHRMs electronic signal substitution calibrations following additional review of the licensee commitments.

R3 Radiation Protection and Chemistry Documentation (83750, 84750)

a. Inspection Scope (83750, 84750)

The 1996 Annual Radiological Environmental Operating Report required by TSs 5.6.2 and conducted in accordance with the Section 4 of the ODCM were reviewed and discussed with licensee representatives. In addition, results of the 1996 Annual Radioactive Effluent Release Report submitted in accordance with 5.6.3 were discussed in detail.

In addition, the inspectors reviewed recent licensee evaluations regarding a potential unmonitored liquid release pathway through the Residual Heat Removal Service Water (RHR SW) heat exchanger system.

b. Observations and Findings

The inspectors verified that the 1996 Annual Radiological Environmental Monitoring Program was implemented appropriately and the report was prepared and submitted in accordance with TS and ODCM specifications. For two radionuclides, Manganese-54 and Cobalt-60, measured in shoreline sediment a few miles downstream of the plant discharge, doses were insignificant fractions of the ODCM limits and represented inconsequential doses to the environment and public. No discernible offsite effect was demonstrated from plant discharges to the environs.

The 1996 Annual Radioactive Effluent Release Report was submitted in accordance with TS and ODCM requirements. In general, 1996 calculated doses from effluents were less than 3 percent of the ODCM limits. No unplanned releases were identified in the report.

A licensee 10 CFR 50.59 screening evaluation was conducted for a potential unmonitored liquid effluent release pathway through the RHR SW heat exchanger system. The licensee's evaluation determined that potential release pathway would have negligible effect on offsite dose results for both normal and accident conditions. The inspectors verified that appropriate administrative controls and sampling were established to ensure any releases were monitored properly and were within 10 CFR limits.

c. Conclusions

Licensee programs to control, monitor and document liquid and airborne radionuclide effluent releases were maintained and implemented properly. The Radiological Environmental Monitoring Program sampling, analysis and reporting requirements were implemented effectively and demonstrated minimal environmental impact.

Projected offsite doses resulting from effluents were well within the limits specified in the Offsite Dose Calculation Manual and 40 CFR 190.

R4 Staff Knowledge and Performance in Radiation Protection and Chemistry

R4.1 Maintenance Worker Contamination - Unit 1

a. Inspection Scope (92902) (92904)

On May 23, 1997, a maintenance worker became contaminated while performing work activities in the Unit 1 torus area. The inspectors reviewed MWO 1-97-1186, Repair Leak per Attached Weld Sketch, radiation work permits 097-0002 and 097-0003, procedures 51GM-MNT-025-0S, "General

Welding Requirements For Pressure Boundary Applications," Rev. 4, ED 1, 50AC-MNT-001-0S, "Maintenance Program," Rev. 24, 60AC-HPX-004-0S, "Radiation and Contamination Control," Rev. 14, 42FP-FPX-004-0S, "Fire Protection Reviews," Rev. 5, and Significant Occurrence Report, SOR C09702718.

b. Observations and Findings

A welder was assigned to conduct a welding repair for a 1.5 inch crack on a clean radiological waste pipe in the Unit 1 torus area. The craftsman contacted HP personnel and was told that the area was contaminated. The craftsman and a fire watch dressed out in full anti-contaminated clothing and proceeded to conduct the welding repairs. After about 1.5 hours of work the personnel exited the area for lunch. Both workers conducted a contamination check using the personnel contamination monitors. The monitors alarmed indicating both workers were contaminated. A short time later, one worker was able to exit with no contamination indicated. The second worker was given a whole body frisk which indicated contamination levels of 95,000 disintegrations per minute (dpm) on his left shoe, 58,000 dpm on his face and 29,000 dpm on his forearms. After four showers, the contamination levels were reduced to 6,000 dpm on his face, 4,000 dpm on his forearms and his shoes were disposed of in radioactive trash.

The worker was excluded from the site and was allowed to go home with no further decontamination. HP personnel completed a personnel contamination report and conducted bioassay analysis. The analysis and dose calculations revealed that the committed effective dose equivalent was less than 1 millirem. The post-event area survey report showed that smearable contamination levels were as high as 120 mrad/100 square centimeters. HP personnel concluded that the smearable levels clearly exceeded the capacity of single cotton protective clothing considering the wet working conditions.

The inspectors observed that MWO 1-97-1186 specified that the work be performed using RWP 097-0002. The inspectors reviewed the RWP and observed that the work conditions specified were routine breach, minor mechanical/electrical/I&C support work. The inspectors observed that another section of the RWP indicated that no breach was allowed using the protective clothing listed on the RWP. It was management's expectation that workers contact HP to discuss their specific job to ensure HP coverage is correct. The inspectors observed that the RWP was not adequate for the specific work that was identified on the MWO (welding under wet conditions).

The inspectors also observed that the RWP was written to cover multiple conditions. For example, the RWP specified that under certain conditions booties, gloves, scrubs and hard hat may be appropriate. Other work conditions listed were boots and gloves to inspect, if conditions allow, no protective clothing required for clean areas, and

scrubs and single protective clothing may be appropriate for other work. The inspectors observed that the RWP was written to cover multiple work conditions and the individual worker was to determine if his specific work condition was covered by the RWP. The inspectors observed that broad based RWPs were a common practice.

The inspectors observed that the maintenance personnel who performed the work did not use RWP 097-0002, which was specified on the MWO. Instead, RWP 097-0003 was used. The inspectors observed that the work specified on this RWP, in part, miscellaneous maintenance (no breach), inspection, vibration readings, oil samples/add oil, crane movement, shaft voltage reading, fire watch in high radiation/contamination areas. The inspectors observed that the RWP was not adequate for the welding work that was identified on MWO 1-97-1186. This RWP was also written in broad terms similar to RWP 097-0002.

The inspectors were informed that HP staff personnel reviewed MWOs and determined what RWPs should be used to conduct the specified work activity. In this case, an RWP update survey was requested by scheduling personnel about two days prior to the scheduled work. The updated survey was not performed and updated results were not available for use. The inspectors were informed that the maintenance personnel contacted the HP office and inquired about the radiological conditions of the torus area. HP personnel used a survey completed on May 19 and informed the maintenance personnel that the contamination levels were less than 1000 dpm per 100 square cm and that a single dress out of protective clothing would be sufficient. The inspectors were informed that the maintenance personnel did not inform HP about the type of work to be performed (welding) or the extent of the job scope and HP personnel did not inquire about the work. The inspectors concluded that poor communications may have contributed to the problem.

The inspectors were informed that the HP technician usually assigned to this maintenance team was not at work on the day these maintenance work activities occurred and that this may have contributed to the problem. The inspectors concluded that obtaining radiological work conditions to ensure proper HP coverage for the assigned work was a fundamental work requirement that was not performed.

The inspectors considered maintenance personnel failure to discuss the planned work and job scope with HP personnel, to ensure that correct radiological controls and processes were inplace for the assigned work, a failure to follow step 4.2.19 of procedure 50AC-MNT-001-0S, "Maintenance Program," Rev.24. The procedure step required in part, that part of the responsibilities to implement the Maintenance Program was to identify the requirements for RWPs for authorized work. Additionally, HP personnel failed to demonstrate a questioning attitude with respect to determining what work was to be performed to ensure HP coverage and RWP requirements were adequate. This was identified as a negative observation.

The inspectors reviewed Significance Occurrence Report (SOR) C09702718 and observed that the report included root cause determination and recommended corrective actions. The root cause section of the report stated in part, that the root causes were 1) inadequate communications on the nature of the work between Maintenance and HP personnel, 2) upon finding wet conditions, the worker did not notify HP personnel to reassess the dress requirements, 3) HP technician assigned to the shift team was on vacation contributing to the communications barrier. The inspectors concluded that the root causes identified were reasonable.

The inspectors followed up on deficiencies identified during their review of the problem to determine if the deficiencies were identified during the licensee's review for the SOR. The inspectors observed that no deficiencies were written for the following problems:

- The craftsman did not use the RWP specified on the MWO.
- The RWP used by the craftsman was not adequate for the job.
- The RWP specified on the MWO was not adequate for the job.

Although the SOR adequately identified the root cause of the contamination problem, the reviewers failed to identify and document other deficiencies. This was identified as a negative observation in the use of the deficiency card program.

The inspectors observed that there has been several recent individual contamination events. The inspectors questioned management personnel about the performance of HP personnel assigned to the maintenance teams. A recent change, since the implementation of maintenance teams, was that HP coverage for maintenance work is generally provided by HP technicians assigned to the particular maintenance team. However, additional HP personnel are available to provide additional support if needed. The inspectors were informed that an Event Review Team (ERT) was assigned to review this particular contamination problem as well as other recent HP and contamination problems. The ERT was to determine if programmatic or common problems exist for the events and to make recommendations to management for corrective actions. This aspect of personnel contaminations was identified as IFI 50-321, 366/97-05-03: Review of Licensee's Root Cause Determination and Corrective Actions for Personnel Contaminations.

c. Conclusions

The inspectors concluded that a failure to implement maintenance procedures to ensure that Radiological Work Permit requirements and Health Physics coverage was adequate for the assigned work activity was a violation for failure to follow procedure. This violation was identified as an example of VIO 50-321, 366/97-07-01: Failure to Follow Procedure - Multiple Examples. A negative observation was identified for Health Physics personnel failure to demonstrate a questioning attitude to ensure radiological controls were adequate for an assigned

work activity and for the failure of personnel to identify and document several deficiencies surrounding the personnel contamination.

R5 Staff Training and Qualifications in Radiological Protection and Chemistry

R5.1 Hazardous Material Training

a. Inspection Scope (86750, TI 2515/133)

Training provided to meet the requirements of 49 CFR Part 172 Subpart H were reviewed and discussed with licensee representatives.

b. Observations and Findings

From review of training records, the inspectors verified that hazmat training was provided to a new radwaste HP foreman. From review of training material presented, the inspectors confirmed that recent DOT changes to shipping and packaging requirements were included in the training.

c. Conclusions

Appropriate hazmat training was provided to personnel handling and packaging radioactive materials for transport.

R7 Quality Assurance in Radiation Protection and Chemistry Activities (83750, 84750)

R7.1 Audits

a. Inspection Scope (83750)

The inspectors reviewed and discussed audits of Health Physics, Chemistry and Radioactive Waste program areas.

The inspectors reviewed and discussed the following Safety Audit and Engineering Review (SAER) reports:

- Audit Report 97-CH-1, Audit of Chemistry, dated March 12, 1997.
- Audit Report 97-RW-1, Audit of Radioactive Waste Program, dated March 25, 1997.
- Audit Report 97-HP-1, Audit of Health Physics & Radiation Protection Program dated June 2, 1997.

The inspectors assessed the scope, thoroughness and status of corrective actions of the audits.

b. Observations and Findings

Audits consisted of interviews, record review and direct observations by qualified audit personnel. Audits were performance-based and the audit contents were adequate samples of program attributes. The inspectors verified that findings were characterized appropriately in the reports, were reviewed by licensee management and corrective actions appeared adequate and timely.

c. Conclusions

Audits of chemistry, radwaste and radiological control programs were thorough and findings were corrected in a timely manner.

R7.2 Effluent Measurement and Radiological Environmental Monitoring Program Quality Control Activities

a. Inspection Scope (83750)

Counting room instrumentation quality control checks were reviewed and discussed.

Minimum Detectable Concentrations (MDCs) for selected gaseous and particulate radionuclides in airborne effluents were verified against limits detailed in the ODCM.

Results of the 1996 Inter-laboratory Comparison Program for the Radiological Environmental Monitoring Program (REMP) as required by Section 4 of the ODCM were reviewed and discussed.

b. Observations and Findings

Quality control daily checks to verify system performance were conducted for counting room instrumentation in accordance with licensee procedures. Based on detector efficiencies, sample volume and counting time, the MDCs for the radionuclides reviewed met the established detection criteria for airborne effluent measurements.

The inspectors noted and discussed the poor performance in REMP QC analysis results. The report documented numerous examples of the cross-check samples which were processed by an approved off-site laboratory which exceeded normalized range or deviation warning and control limits. The inspectors noted that no site representatives were knowledgeable of the specific corrective actions being taken in regard to the REMP QC sample analysis results. Subsequent discussions indicated that corrective actions appeared appropriate.

c. Conclusions

Counting room QC activities were conducted in accordance with approved procedures and demonstrated detector and analysis system operability.

Supervisory oversight of the REMP QC activities by site personnel were minimal.

R8 Miscellaneous Radiation Protection and Chemistry Issues (92904)

R8.1 (Closed) Inspection Followup Item (IFI) 50-321, 366/96-10-10: review licensee evaluations regarding gas geometry QC sample analyses and main steam line monitor response biases. In response to a lack of a gas QC analysis in the laboratory QC program, procedure 64CH-QCX-001-0S, "Quality Control for Laboratory Analysis," Rev. 3, Attachment 10 was revised to include quantitative analysis of a gas quality control cross-check sample on a biennial frequency. For identified biases regarding the main steamline monitors, the licensee procured a new NBS traceable calibration source for calibration activities. Results of the most recent U2 MSL calibrations verified a significant reduction in the identified bias. Licensee representatives stated that additional modifications to existing equipment were being evaluated to allow adjustments to the system thereby improving accuracy of the readings. Based on licensee actions, the inspectors noted this item would be considered closed.

S2 Status of Security Facilities and Equipment (71750)

The inspectors toured the protected area and observed that the perimeter fence was intact and not compromised by erosion nor disrepair. The fence fabric was secured and barbed wire was angled as required by the licensee's procedures. Isolation zones were maintained on both sides of the barrier and were free of objects which could shield or conceal an individual. The inspectors observed that personnel and packages entering the protected area were searched either by special purpose detectors or by a physical patdown for firearms, explosives and contraband. Badge issuance was observed, as was the processing and escorting of visitors. Vehicles were searched, escorted and secured as described in applicable procedures.

The inspectors concluded that the areas of security inspected met the applicable requirements.

V. Management Meetings

X.2 Review of UFSAR Commitments

A recent discovery of a licensee operating their facility in a manner contrary to the Updated Final Safety Analysis Report (UFSAR) description highlighted the need for a special focused review that compares plant

practices, procedures and/or parameters to the UFSAR description. While performing the inspections discussed in this report, the inspectors reviewed the applicable portions of the UFSAR that related to the areas inspected. The inspectors verified that the UFSAR wording was consistent with the observed plant practices, procedures, and/or parameters.

X.3 Exit Meeting Summary

The inspectors presented the inspection results to members of the licensee management at the conclusion of the inspection on July 11, 1997. The license acknowledged the findings presented. An interim exit was conducted on June 6 and 27, 1997.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

Anderson, J., Unit Superintendent
Betsill, J., Assistant General Manager - Operations
Breitenbach, C. Engineering Support Manager - Acting
Curtis, S., Unit Superintendent
Davis, D., Plant Administration Manager
Fornel, P., Performance Team Manager
Fraser, O., Safety Audit and Engineering Review Supervisor
Hammonds, J., Operations Support Superintendent
Kirkley, W., Health Physics and Chemistry Manager
Lewis, J., Training and Emergency Preparedness Manager
Madison, D., Operations Manager
Moore, C., Assistant General Manager - Plant Support
Reddick, R., Site Emergency Preparedness Coordinator
Roberts, P., Outages and Planning Manager
Thompson, J., Nuclear Security Manager
Tipps, S., Nuclear Safety and Compliance Manager
Wells, P., General Manager - Nuclear Plant

INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering
IP 40500: Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
IP 61726: Surveillance Observations
IP 62700: Maintenance Implementation
IP 62707: Maintenance Observations
IP 71707: Plant Operations
IP 71750: Plant Support Activities
IP 83750: Occupational Radiation Exposure
IP 84750: Radioactive Waste Treatment, and Effluent and Environmental Monitoring
IP 86750: Solid Radioactive Waste Management and Transportation of Radioactive Materials
IP 92700: Onsite Follow-up of Written Reports of Nonroutine Events at Power Reactor Facilities
IP 92901: Followup - Operations
IP 92902: Followup - Maintenance/Surveillance
IP 92903: Followup - Followup Engineering
IP 92904: Followup - Plant Support
TI 2515/133: Implementation of Revised 49 CFR Parts 100-179 and 10 CFR Part 71

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-321, 366/97-05-01	VIO	Failure to Follow Procedure - Multiple Examples
50-321, 366/97-05-02	IFI	Installation of the Wrong Type of Connector on Wide Range Monitor D11K621A
50-321, 366/97-05-03	IFI	Review of Licensee's Root Cause Determination and Corrective Actions for Personnel Contaminations
50-321, 366/97-04	URI	Determine the Reportability of Licensee Identified Deficiencies With Respect to IN 92-18, Potential for Loss of Remote Shutdown Capability During a Control Room Fire
50-321, 366/97-05-05	URI	Evaluate licensee review and actions regarding current CHRMS electronic calibration against licensee commitments to meet NUREG 0737 Item II.F.3-1

Closed

50-321, 366/96-14-04	IFI	potential deficiencies in the High Pressure Coolant Injection (HPCI) surveillance procedure
50-321, 366/96-14-03	VIO	failure to implement configuration control requirements - multiple examples
50-321, 366/96-15-03	IFI	resolution of RCIC HPCI turbine speed control drift
50-321, 366/96-12-03	VIO	Failure to Follow Procedure for Implementation of the Maintenance Rule.
50-321, 366/96-10-10	IFI	Review Licensee Evaluations Regarding Gas Geometry QC Sample Analyses and Main Steam Line Monitor Response Biases.
50-321/97-02	LER	Less than Adequate Procedure Results in a Condition Prohibited by TS.

Discussed

50-321, 366/96-12-01	VIO	Failure to Include All Structures, Systems, and Components in the Scope of the Maintenance Rule as Required by 10 CFR 50.65

50-321, 366/96-12-02	VIO	Failure to Establish Adequate Performance Criteria for S.C. Risk Significant Functions
50-321, 366/96-12-04	IFI	Failure to Provide Adequate Procedure for Implementation of Maintenance Rule Requirements
50-321, 366/96-12-05	IFI	Followup on Licensee Actions to Provide Performance Criteria for Structures After Industry Resolution of this Issue